

Amendment to the Claims

What is claimed is:

1. (Currently amended) A method for the extraction and desorption of at least one analyte in a liquid phase analyte-bearing sample, said method comprising:  
providing a tubular membergas chromatograph injection port liner sized for communication with an analytical device to be encapsulated within an injection port housing of a gas chromatograph, said gas chromatograph injection port liner having a passageway therethrough, said gas chromatograph injection port liner having an interior surface defining said passageway;  
coating ansaid interior surface of said tubular membergas chromatograph injection port liner with a sorptive coating, said sorptive coating selected to partition said at least one analyte from said liquid phase analyte-bearing sample;  
injecting said liquid phase analyte-bearing sample into said passageway of said coated tubular membergas chromatograph injection port liner;  
sorptively extracting said at least one analyte from said liquid phase analyte-bearing sample, leaving a liquid phase remaining analyte-bearing sample;  
removing said liquid phase remaining analyte bearing sample from said coated tubular membergas chromatograph injection port liner;  
desorbing said at least one analyte from said coated tubular membergas chromatograph injection port liner; and  
introducing said desorbed at least one analyte into said analytical—devicegas chromatograph.

2. (Cancelled) The method of claim 1, wherein:

    said analytical device is a gas chromatograph;

    said gas chromatograph having an injection port housing;

    said injection port housing receiving said tubular member therein.

3. (Original) The method of claim 1, wherein said sorptive coating comprises at least one selection from the group consisting of:

    (a) an immobilized polysiloxane polymer, having two attached functional groups, wherein the first attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl, and the second attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl;

    (b) a porous layer;

    (c) other immobilized polymers above their glass transition temperature;

    (d) an immobilized porous polymer;

    (e) a sol gel; and

    (f) an immobilized adsorbent.

4. (Currently amended) The method of claim 3, wherein:  
said injection step includes connecting said coated tubular member gas chromatograph injection port liner to a vessel;  
said vessel containing said liquid phase analyte-bearing sample; and  
said removing step includes separating said coated tubular member gas chromatograph injection port liner from said vessel.
5. (Cancelled) The method of claim 3, wherein:  
said analytical device is a gas chromatograph;  
said gas chromatograph having an injection port housing;  
said injection port housing receiving said tubular member therein.
6. (Cancelled) A method for the extraction and desorption of at least one analyte in a liquid phase analyte-bearing sample, said method comprising:  
providing a gas chromatograph injection port liner sized to be encapsulated within an injection port housing of a gas chromatograph, said gas chromatograph injection port liner having a passageway therethrough, said gas chromatograph injection port liner having an interior surface defining said passageway tubular member sized for communication with an analytical device;  
coating an interior surface of said gas chromatograph injection port liner tubular member with a sorptive coating, said sorptive coating selected to partition said at least one analyte from said liquid phase analyte-bearing sample, leaving a liquid phase remaining analyte-bearing sample said sorptive coating comprising at least one selection from the group consisting of:
  - (a) an immobilized polysiloxane polymer, having two attached functional groups, wherein the first attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl, and the

second attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl;

- (b) a porous layer;
- (c) other immobilized polymers above their glass transition temperature;
- (d) an immobilized porous polymer;
- (e) a sol gel; and
- (f) an immobilized adsorbent;

injecting said liquid phase analyte-bearing sample into said coated gas chromatograph injection port linertubular member;

sorptively extracting said at least one analyte from said liquid phase analyte-bearing sample, leaving a liquid phase remaining analyte-bearing sample;

removing said liquid phase remaining analyte bearing sample from said coated gas chromatograph injection port linertubular member;

desorbing said at least one analyte from said coated gas chromatograph injection port linertubular member; and

introducing said desorbed at least one analyte into said gas chromatograph analytical device;

said analytical device is a gas chromatograph;

said gas chromatograph having an injection port housing; and

said injection port housing receiving said tubular member therein.

7. (Currently amended) A tubular member~~gas chromatograph injection port liner~~ for performing extraction and desorption, said gas chromatograph injection port liner sized to be encapsulated in the injection port housing of a gas chromatograph~~said tubular member~~gas chromatograph injection port liner comprising:

an inlet, an outlet, and a passageway therethrough;

said passageway providing fluid communication from said inlet to said outlet;

said passageway defined by an interior surface;

said interior surface coated with a sorptive coating, said sorptive coating selected to partition said at least one analyte from said liquid phase analyte-bearing sample, to leave a liquid phase remaining analyte-bearing sample; and

    said sorptive coating comprises at least one selection from the group consisting of:

- (a) an immobilized polysiloxane polymer, having two attached functional groups, wherein the first attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl, and the second attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl;
- (b) a porous layer;
- (c) other immobilized polymers above their glass transition temperature;
- (d) an immobilized porous polymer;
- (e) a sol gel; and
- (f) an immobilized adsorbent.

8. (Original) The device in claim 7, further comprising:  
said interior surface having a uniformly smooth surface.
9. (Original) The device in claim 7, further comprising:  
said interior surface having an irregular surface.
10. (Original) The device of claim 7, wherein:  
said tubular member is received into the injection port housing of a gas chromatograph.
11. (Currently amended) A tubular member gas chromatograph injection port liner sized to be encapsulated within the injection port of a gas chromatograph for performing extraction and desorption, said tubular member gas chromatograph injection port liner comprising:  
an inlet, an outlet, and a passageway therethrough;  
said passageway providing fluid communication from said inlet to said outlet;  
said passageway defined by an interior surface;  
said interior surface having a uniformly smooth surface;  
said interior surface coated with a sorptive coating, said sorptive coating selected to partition said at least one analyte from said liquid phase analyte-bearing sample, to leave a liquid phase remaining analyte-bearing sample; and  
said sorptive coating comprises at least one selection from the group consisting of:
  - (a) an immobilized polysiloxane polymer, having two attached functional groups, wherein the first attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl, and the

second attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl;

- (b) a porous layer;
- (c) other immobilized polymers above their glass transition temperature;
- (d) an immobilized porous polymer;
- (e) a sol gel; and
- (f) an immobilized adsorbent.

12. (Currently amended) A tubular membergas chromatograph injection port liner sized to be encapsulated within the injection port of a gas chromatograph for performing extraction and desorption, said tubular membergas chromatograph injection port liner comprising:

an inlet, an outlet, and a passageway therethrough;  
said passageway providing fluid communication from said inlet to said outlet;  
said passageway defined by an interior surface;  
said interior surface having an irregular surface;  
said interior surface coated with a sorptive coating, said sorptive coating selected to partition said at least one analyte from said liquid phase analyte-bearing sample, to leave a liquid phase remaining analyte-bearing sample; and  
said sorptive coating comprises at least one selection from the group consisting of:

- (a) an immobilized polysiloxane polymer, having two attached functional groups, wherein the first attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl, and the

second attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl;

- (b) a porous layer;
- (c) other immobilized polymers above their glass transition temperature;
- (d) an immobilized porous polymer;
- (e) a sol gel; and
- (f) an immobilized adsorbent.

13. (Currently amended) A method for the extraction and desorption of at least one analyte in a liquid phase analyte-bearing sample for use with a heated gas chromatograph, said chromatograph including an injection port housing, said method comprising:

providing a tubular membergas chromatograph injection port liner sized to be encapsulated within said injection port housing of said heated gas chromatograph as a gas chromatograph injection port liner, said gas chromatograph injection port liner sized to fit within said injection port housing;

coating an interior surface of said tubular membergas chromatograph injection port liner with a sorptive coating;

injecting said liquid phase analyte-bearing sample into said coated tubular membergas chromatograph injection port liner;

sorptively extracting said at least one analyte from said liquid phase analyte-bearing sample, leaving a liquid phase remaining analyte-bearing sample;

removing said liquid phase remaining analyte bearing sample from said coated tubular membergas chromatograph injection port liner;

installing said tubular membergas chromatograph injection port liner in said injection port housing of said gas chromatograph;

increasing the temperature of injection port housing by heating from said heated gas chromatograph until said at least one analyte is desorbed from said coated tubular membergas chromatograph injection port liner; and

introducing said desorbed at least one analyte into said analytical devicegas chromatograph.

14. (Currently amended) The method of claim 13, wherein said sorptive coating is selected to partition at least one analyte from said liquid phase analyte-bearing sample.